

Exercise Therapy

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Axis

Axes of Movement in Kinesiology: Definition, Types, Planes and Examples

Definition

An axis is an imaginary line around which a body segment or joint rotates during movement.

In biomechanics & Exercise Therapy, movement occurs in a plane and rotates around an axis that is perpendicular to that plane.

Types of Axes

Axis	Direction	Associated Plane	Example Movement
Mediolateral (Frontal) Axis	Side to side	Sagittal Plane	Flexion and Extension of knee, elbow
Anteroposterior (Sagittal) Axis	Front to back	Frontal Plane	Abduction and Adduction of shoulder, hip
Vertical (Longitudinal) Axis	Up and down	Transverse Plane	Rotation of head, trunk, shoulder

Examples

Knee Flexion and Extension

Movement Plane: Sagittal Plane

Axis: Mediolateral Axis

Shoulder Abduction

Movement Plane: Frontal Plane

Axis: Anteroposterior Axis

Neck Rotation

Movement Plane: Transverse Plane

Axis: Vertical Axis

Sagittal Plane → Mediolateral Axis

Frontal Plane → Anteroposterior Axis

Transverse Plane → Vertical Axis

Remember: Movement occurs in a plane and rotates around an axis perpendicular to that plane.

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